

**Directions:** All questions must be completed on loose leaf. A calculator is allowed. Please reduce any fractions to lowest terms. Place a box around your final answer. **ALL WORK MUST BE SHOWN FOR FULL VALUE.**

**Part A: Please answer all questions.****/12**

1. Evaluate.

2 marks each

a)  $\frac{2^4 - 3 + 12 \div 4}{(-64) \div (7 - 3)} =$

b)  $\frac{7(-4)(12)}{64 \div 2^3} =$

c)  $(5^3 - 4^2)^0 - (6^2 - 8^0) =$

2. Solve the following inequalities.

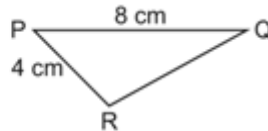
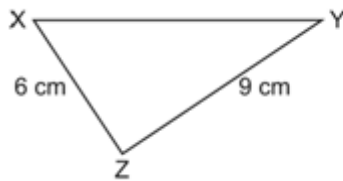
2 marks each

a)  $3x + 7 \leq 4x - 12$

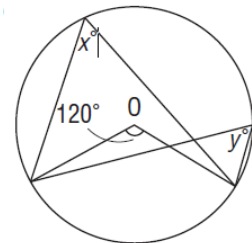
b)  $\frac{2}{3}x + 12 \geq 3$

3. Find the missing sides XY and QR.

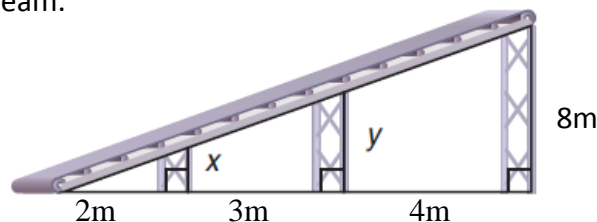
2 marks

**Part B: Please answer all questions. 3 marks each****/12**

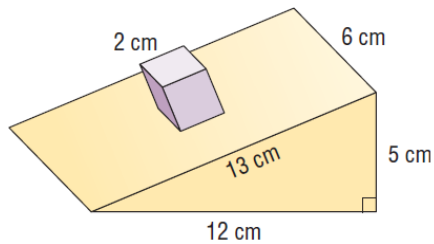
1. Johnny Boy says he can find the centre of a circle using only 2 chords of any length. Girly Girl says she can do the same by using 2 tangents. Who is right? Explain your answer and provide a drawing for each person showing its work.

2. Find the value of  $x$  and  $y$  and explain how you found them.

3. Brandon is building a snowboarding ramp in his backyard. Find the length of each support beam.



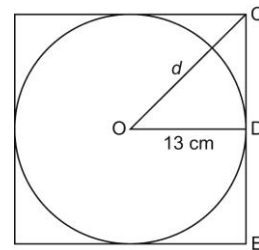
4. Find the total surface area of the following shape.



**Part C: Complete question 1 and choose any 2 of the remaining 3 questions.**  
**4 marks each** **/12**

1. Solve:  $\frac{3(x-1)}{5} - \frac{4(x-2)}{4} = \frac{2(4-x)}{3} + 2$   
 ( If a fraction - then leave in fraction form)

2. A circular plate fits perfectly inside a square box. Finds the distance,  $d$ , that separate the centre of the plate to the corner of the box and the perimeter of the box.



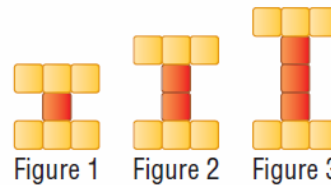
3. Look at the following sequence.

- a) Describe the pattern in words.

- b) Write an equation representing the situation.

- c) How many blocks will be necessary to complete figure 10?

- d) You have 100 blocks, how many fully completed figures would you be able to built?



4. The following graph represents a linear relation.

Find the value of  $x$  when:

a)  $y = 1$

b)  $y = 3$

Find the value of  $y$  when:

a)  $x = -6$

b)  $x = 8$

